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## **Disclaimer**

The information provided in this reference section as well as the nutrient values in the food item database are correct to the best of our knowledge.

Most of the nutrient values were obtained from U.S. Dept. of Agriculture literature, and the nutritional information was obtained from general reference sources or health organizations.

***However,***

the developers of this software are not nutritionists nor nutritional experts and can not be held accountable for the veracity or accuracy of the information or data provided.

This information is provided solely for the purpose of helping one better understand his or her existing diet. You should consult more authoritative sources or references in determining your own specific nutritional needs and in developing a dietary program.

If you believe any information provided is seriously in error, please contact :

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## Calories :

A calorie is a measure of the chemical energy contained in a food ( primarily in carbohydrates, fat, and protein). Calories provide fuel to the body so that it may perform functions necessary for life.

Calorie deficiency will lead to burning of body fat and possibly muscle breakdown. Excessive amounts of calories will lead to storage of more body fat, but there are numerous factors involved in determining what is an adequate amount and what is too much. Generally, the source of the calories can be as much or more important as the quantity. If one only counts calories, then he or she is missing the big picture.

Whole books have been written on the subject, but in general :

- n most calories should come from complex carbohydrates
- n calories from simple sugars (sweets) should be limited
- n the percentage of total calories coming from fat should not exceed 30% (many experts recommend even less)

Often nutritional requirements will be listed in terms of the percentage of total calories coming from each nutrient (e.g. 55% of calories from carbohydrates, 25% of calories from protein, and 20% of calories from fat).

( Generally though, protein requirements should not be thought of in terms of calories; if protein is being burned as fuel, then one needs more carbohydrates and/or less protein).

## **Protein :**

Proteins are the building blocks of the body. Protein is the major source of material for muscles, blood, skin, hair, nails, and internal organs. It is also utilized in a wide variety of body functions such as the formation of hormones.

Protein can also function as an energy source, providing 4 calories per gram, though ideally most of one's energy requirements should be met with carbohydrates. Excess protein that is not utilized by the body as either building material or fuel can be converted into fat. Excess protein can also damage the kidneys.

The US RDA for protein is 56 grams for adult males and 44 grams for adult females ( or 0.36 grams per pound of ideal body weight). In general, these numbers are for sedentary individuals. Active persons need more, and those performing muscle-building activities (such as lifting weights) need even more than that. However, even these increased requirements are usually easily satisfied (and exceeded) unless one is a vegetarian, is on a restricted calorie diet, or is on a restricted fat diet. Generally, intake should be restricted to about 0.72 grams per pound of ideal bodyweight (twice the US RDA).

Vegetarians and weightlifters both should especially consult other reference material about their protein needs.

## **Carbohydrates :**

Carbohydrates are the primary energy source for the body. Carbohydrates are classified as being either complex (starches and fiber) or simple (sugars). Complex carbohydrates are the body's best source of energy, and simple sugars should be avoided.

Simple sugars are digested easily and give the body almost instant energy, usually followed by a deep drop. Complex carbohydrates take longer to digest and can help provide consistent energy throughout the day. Experts recommend that at least 55% of one's calories should come from complex carbohydrates (preferably even more by substituting complex carbohydrates for fat).

## **Fat :**

Fats and oils are calorie dense nutrients ( 9 calories per gram ) that act as energy sources and are involved with the absorption of the fat-soluble vitamins. Over abundance of fats can lead to a host of problems, such as being fat, heart disease, and cancer just to name a few. Experts recommend that no more than 30% of one's calories come from fat ( even less is better ).

Fats are classified as being either saturated or unsaturated. Saturated fats are the "bad" fats that usually come from animal fats and tropical oils such as coconut and palm oils. It is recommended that no more than 10% of one's total calories should come from saturated fat.

Unsaturated fats are better, and they are classified as either polyunsaturated or monounsaturated. Sources of polyunsaturated fat include vegetable oils and margarine. Monounsaturated fats include olive oil and peanut oil. ( Olive oil has gained attention recently because of its positive effects on serum cholesterol levels; peanut oil however is full of triglycerides).

## **Cholesterol :**

Cholesterol is a soft, waxy, fatlike substance found in animal products (including humans). Excessive quantities ( in the blood stream ) will lead to heart disease and atherosclerosis. Cholesterol in the blood is called serum cholesterol, and cholesterol in food products is called dietary cholesterol. Recommended maximum intake of dietary cholesterol is between 250 and 300 mg per day. Saturated fats will generally lead to higher serum cholesterol levels than will dietary cholesterol.

Lipoproteins are packages that transport cholesterol through the blood. High-density lipoproteins ( HDLs) aid one's body in excreting cholesterol. Low-density lipoproteins ( LDLs ) deposit cholesterol on artery walls.

Some studies suggest that soluble fiber ( such as oat bran ) improves serum cholesterol levels. Other studies suggest that olive oil will decrease the bad LDLs while retaining the good HDLs.

## **Sodium :**

Sodium is a mineral that helps regulate one's body fluid levels. An excess can lead to high blood pressure and possibly other problems. Recommended levels are at 1100 to 3100 mg per day. Much of its function is associated with potassium.

## **Potassium :**

Potassium is a mineral, that among other things, regulates one's body fluid levels. Much of its function is associated with sodium, and some studies suggest that it can lower high blood pressure caused by sodium. Other studies suggest that it increases the elasticity of artery walls and thus could help ward off strokes. It is recommended that one consume at least 2000 mg per day and 1.7 times as much potassium as sodium.

## **Calcium :**

Calcium is a mineral that many Americans have been deficient in. Calcium deficiencies are linked most prominently with osteoporosis ( a weakening of the bones ) and in some studies to high blood pressure. Excessive calcium can lead to kidney stones. The US RDA is 800 mg per day for adult men and women ( children and teenagers require more ).



